



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/667,478

09/23/2003

Laurent C. Bissonnette

20002.0328

9072

79175

7590

05/20/2009

HANIFY & KING PROFESSIONAL CORPORATION

1055 Thomas Jefferson Street, NW

Suite 400

WASHINGTON, DC 20007

EXAMINER

LE, BRIAN Q

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/667,478	Applicant(s) BISSONNETTE ET AL.	
	Examiner BRIAN Q. LE	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-13 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-13, 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/10/2009 has been entered.

Response to Amendment and Arguments

2. The request for the double patenting rejection to be withdrawn (page 9 of the Remarks) was considered but not persuasive because the instant application is not in the condition for allowance due to the maintained rejections (as discussed below).

3. Regarding the rejection of claims 2-3 and 9-14 under 35 U.S.C. 112, first paragraph, the Applicant shows page 8, line 29 to page 9, line 8 to show the support of the claims. However, the cited location **does not show how** one of ordinary skill in the art to use the mention algorithms to identify golf clubs or golf balls less than 6 seconds or 1 seconds. Thus, the rejection is maintained.

4. Applicant's arguments with regard to claims 1-3, 7, 9, and 15-16 have been fully considered, but are not considered persuasive because of the following reasons:

Regarding claim 1, the Applicant argues (page 8 of the Remarks) that Cameron Reference does not teach acquired image comparison to stored images in these sections. The Examiner respectfully disagrees. Cameron clearly teaches this concept at page 1, [0008] and page 2, [0024].

Art Unit: 2624

5. Applicant's arguments (with respect to the use of Eigen values to perform the recognition step) with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner believes that all the arguments of the Applicant have been properly addressed and explained. Thus, the rejections of all of the claims are maintained.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 9 and 15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 37 of copending Application No.

10/861,441. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 9, and 15 are substantially claiming a concept of automatically identifying golf club and golf ball comprising storing reference image information of golf ball

Art Unit: 2624

and golf club and automatically identifying a club or ball based on a comparison of input image to reference image which claim 37 of Application No. 10/861,441 also substantially disclosed the described concept.

Also claims 1, 9, and 15 of the application recite the open ended transitional phrase “comprising”, does not preclude the method as being performed by an apparatus/method.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim(s) 1-7, 9-13 and 20-21 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit¹, relying upon Supreme Court precedent², has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590”). While the instant claim(s) recite a series of steps

¹ *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

² *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

Art Unit: 2624

or acts to be performed, the claim(s) neither transform an article nor are positively tied to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. That is, regarding independent claims 1 and 9, the claim's limitations do not tie to a particular machine and also do not involve in a "physical or chemical transformation" or a "qualifying data transformation" since the claims' steps do not represent a physical/real object or depict the modified data as an external representation of the physical object or substance, such as but not limited to a visual display. The examiner suggest amending the claims to tie to a particular machine such as "computer" or "image processor (or similar in scope) to the "meaningful and significant steps/limitations" of the claims. Any amendment to the claims should be commensurate with its corresponding disclosure.

Other claims are rejected because they are dependent on the independent claims.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 2-3, and 9-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claims 2-3 and 9, the specification does not disclose sufficient information to enable one skilled in the art to make sure of an **automatic identification of golf clubs or golf balls less than 6 seconds or 1 seconds** (emphasis added). The specification **does not show how** one of ordinary skill in the art

Art Unit: 2624

to use the mention algorithms to identify golf clubs or golf balls less than 6 seconds or 1 seconds.

The prior art rejection is based on the Examiner's best understanding. Appropriate correction is required.

Other claims are rejected because of the dependence on the independent claims.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 7, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Cameron et al. U.S. Publication No. 2001/0029207 and further in view of Matsugu U.S. Pub. No. 2002/0038294.

Regarding claim 1, Cameron teaches a method for identifying a plurality of golf clubs and golf balls (the process of recognizing swing which include the club and the ball) (page 1, column 1, [0008]; page 1, column 2, [0011] and FIG. 4), comprising:

Storing image reference information (when image is capture, stored and then use for further analysis such as identification and comparison, then it is an image reference) (page 1, column 2, first 10 lines and [0011]) for each of the plurality of golf clubs and golf balls (page 1, column 1-2, [0008]);

Acquiring an image of at least one of said balls and clubs during a swing (page 1, column 1, [0011]); and

Art Unit: 2624

identifying (page 3, column 1, [0030]) at least one of said club or ball based on a comparison (page 4, column 2, [0039]) to said image reference information (page 1, column 2, first 10 lines and [0011]).

Cameron does not explicitly teach the identification process using Eigen values. Matsugu teaches an image identification processing (pattern detection) (abstract) wherein detecting a pattern/object (FIG. 8, S807) based on comparison to said image reference (template matching) (page 2, [0020]) information using Eigen values (Eigen image function generates Eigen values) (page 1, [0005]).

Modifying Cameron's method of identification according to Matsugu would be able to identify object based on a comparison to said image reference information using Eigen values. This would improve identification processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Cameron according to Matsugu.

For claim 2, Cameron also teaches the method wherein said automatically identifying (the Kodak Motioncorder Analyzer can process images at 600 frames per second) (page 2, column 1, [0023]) takes about six seconds or less (FIG. 7, ".5000sec").

For claim 3, Cameron also teaches the method wherein said automatically identifying (the Kodak Motioncorder Analyzer can process images at 600 frames per second) (page 2, column 1, [0023]) takes about one second or less (FIG. 7, ".5000sec").

For claim 7, Cameron discloses image reference information is based on inherent features of said balls (performance of the golf ball such as the impact) (page 1, column 2, [0010]) and clubs (dimensions of golf club) (page 1, column 2, [0010]).

Art Unit: 2624

For claim 15, Cameron teaches a system for automatically (column 4, column 2, [0040]) identifying a plurality of objects (the process of recognizing swing which include the club and the ball) (page 1, column 1, [0008]; page 1, column 2, [0011] and FIG. 4), comprising:

At least one camera system (FIG. 1, elements 20, 22, 24 and 26); and

A computational device capable of identifying an acquired image from a library of stored reference information (a computer) (FIG. 1, elements 30, 32 and 34 and page 2, column 2, [0024]).

For claim 16, please refer back to claim 7 for further teachings and explanations.

3. Claims 4-6, 10-13, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Cameron et al. U.S. Publication No. 2001/0029207 and Matsugu U.S. Pub. No. 2002/0038294 as applied to claim 1 above, and further in view of Lawandy et al. U.S. 7,184,569.

Regarding claim 4, Cameron teaches image information can based on a plurality of markers (page 4, column 2, [0040]). However, Cameron does not explicitly teach that markers on image comprise visible ink. Lawandy teaches an object marking process on image (abstract) wherein markers comprise visible ink (visible mark) (column 4, lines 49-55). Modifying Cameron's method of providing marking on reference images according to Lawandy would be able to generate visible mark on images. This would improve processing because it would aid observer to verify the presence of an image to verify characteristics relate to images (column 5, lines 1-5) and therefore, it would have been obvious to one of the ordinary skill in the art to modify Cameron according to Lawandy.

Art Unit: 2624

Also to claim 5, Lawandy further teaches markers comprise ink responsive to ultraviolet light (abstract).

Referring to claim 6, Lawandy also teaches the method wherein said visible ink markers comprise limited spectrum markers responsive to one of the colored light (infrared is colored light) (column 7, lines 65-67) and fluorescent light (column 7, lines 33-35).

Regarding claim 9, please refer back to claims 1-2 and 4 for further teachings and explanations.

For claims 10-13, please refer back to claims 4-7 respectively for further teachings and explanations.

For claim 17, please refer back to claim 5 for further teachings and explanations.

For claim 18, please refer back to claim 4 for further teachings and explanations.

4. Claim 19-21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron et al. U.S. Publication No. 2001/0029207.

Regarding claim 19, Cameron teaches a library of stored reference information (when image is capture, stored and then use for further analysis such as identification and comparison, then it is an image reference) (page 1, column 2, first 10 lines and [0011]) comprises an ability of recording 600 frames per second and stores the data (page 2, column 1, [0023] and page 2, column 2, [0024]). Reasonably, a frame of image can store a golf club and a golf ball (FIG. 4). Thus, it would be obvious that the disclosed device by Cameron able to store more than 200 or more objects from the ability of recording 600 frames per second.

Regarding claims 20-21, the Examiner takes Official Notice that one of ordinary skill in the art who implemented an identification of a golf ball would be able to further identify a

Art Unit: 2624

plurality of golf balls. This can be done whether sequentially or in parallel. Thus, it would have been obvious to one of ordinary skill in the art to be able to identify a plurality of golf balls from an identification of a golf ball.

Contact Information

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN Q. LE whose telephone number is (571)272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Q Le/
Primary Examiner, Art Unit 2624
Monday, May 18, 2009

Application/Control Number: 10/667,478

Page 11

Art Unit: 2624